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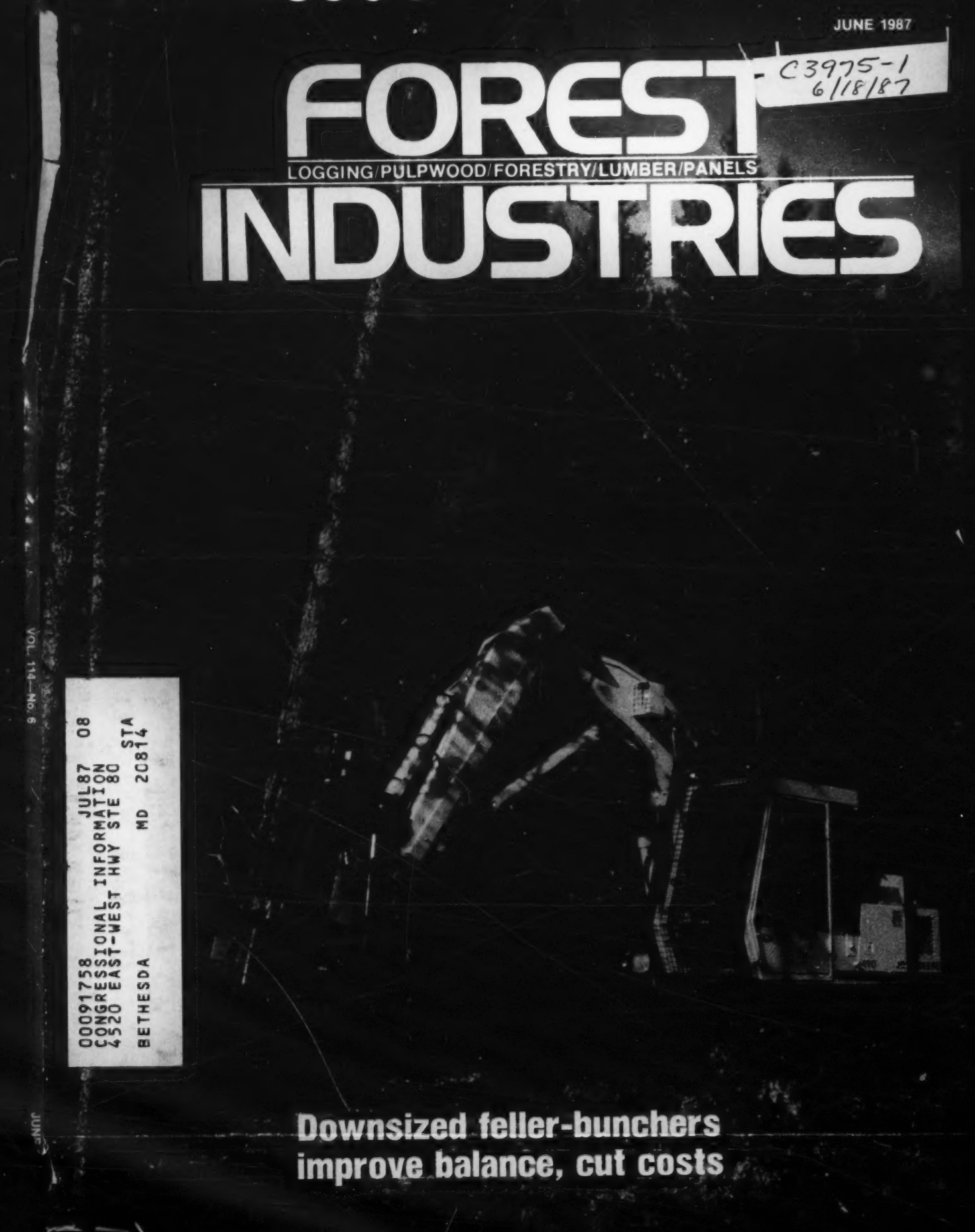

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Downsized feller-bunchers improve balance, cut costs

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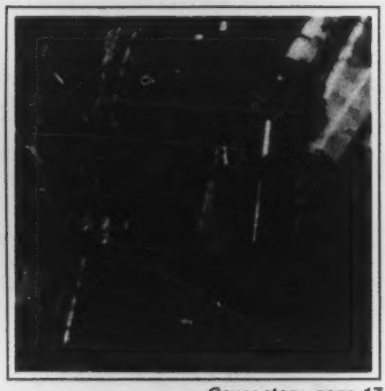

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Canadian export bill scheduled for passage

VANCOUVER, B.C.—One major obstacle in the road leading to an amicable trans-border relationship on the matter of softwood lumber shipments to the United States from Canada appeared on the verge of removal in May.

Legislation mandating the 15% export tax agreed upon at the end of December by negotiators was scheduled for final reading before the House of Commons the week of May 18. Enactment was predicted to follow promptly.

The Canadian Senate had already reviewed the bill and returned it to the House of Commons.

Controversy did not end with the agreement to impose the tariff, it merely took another form. There have been mixed reports about interim collection during the limbo period between agreement and legislation, and criticism has been levied at the United States for not dealing uniformly with exemptions.

From Canada came the argument that wrinkles should be ironed out of the agreement before passage of legislation, while the U.S. position was that no new negotiations should be undertaken until obligations contained in the December agreement are fulfilled.

It should be noted that several major British Columbia firms have made an example of paying the tax prior to action by Parliament. In April, National Forest Products Assn. reported 83% compliance.

The U.S. Coalition for Fair Lumber Imports, wondering if the agreement might have been written in disappearing ink, issued a resolution late in April calling for the U.S. government to "do everything possible to ensure that Canada promptly lives up to its obligations."

Failure to pass enabling legislation means Canada has not collected the tax, the coalition's resolution asserts.

"Instead, it has sought and obtained voluntary contributions of substantial, but diminishing, amounts. Collections are less than they would have been had the Canadian legislature acted."

The number of Canadian firms filing lumber tax returns in February declined more than 15% from January, the coalition claimed.

Meanwhile, federal and provincial officials in Canada will probably confer into the summer or fall on specifics of replacing the 15% tax with formulas assuring higher stumpage prices. ■

U.S. forest industry results first quarter 1987 ($ millions)

Company	Sales	% change 1987/86	Earnings[1]	% change 1987/86
Bohemia Inc. (1/31)	53,000	20.0	700	—
Boise Cascade	912,220	0.36	40,150	80.6
Champion International	1,097,223	-2.24	55,466	152.1
Chesapeake Corp.	155,460	16.3	4,232	—
Federal Paper Board	229,804	10.6	10,934	353.1
Georgia-Pacific	1,855,000	15.6	80,000[2]	166.6
Great Northern Nekoosa	566,700	16.2	43,300	211.5
International Paper	1,800,000	63.6	90,000[2]	260.0
Louisiana-Pacific	422,900	31.1	16,310	1,099.3
Pope & Talbot	100,303	36.4	6,651	1,338.0
Potlatch Corp.	248,628	6.6	17,786	30.4
Scott Paper	967,400	19.5	49,000	25.3
Southwest Forest Industries	170,400	19.6	6,700	255.8
Temple-Inland	390,600	33.4	33,700[2]	147.8
Trus Joist	48,000	47.0	1,600	40.0
Union Camp	537,018	8.5	44,197	100.5
Westvaco (1/31)	440,860	5.9	19,496	-3.8
Weyerhaeuser	1,617,343	23.8	101,917	103.9
Willamette Industries	322,980	18.7	22,947	203.3
WTD Industries (1/31)	41,000	102.0	800	—

[1] Income after taxes, from continuing operations, excluding most significant nonrecurring items in both years.
[2] Georgia-Pacific: 1987 earnings include $6-million pretax gain from stock redemption. International Paper: 1987 earnings include pretax gain of $14 million from sales of securities. 1987 figures include Hammermill Paper Co. Temple-Inland: 1986 quarter includes $4.3-million gain on property and equipment.

Quarterly earnings soar vs. same period in 1986

SAN FRANCISCO, CALIF.—First quarter 1987 was good to most forest products corporations, as improved markets and the results of cost reduction programs joined to improve earnings much greater proportionately than sales totals.

Comparison of first-quarter figures this year and last obscures the fact that, for many companies, business was flat or slightly down versus the final quarter of 1986.

For some integrated companies, paper and related divisions kicked quarterly earnings sharply upstairs. In other cases, solid-wood products carried their share of good news.

• Georgia-Pacific Corp. net income in the first quarter jumped 167% from the comparable 1986 period, while sales increased 16%. Net income for the corporation and its building products group set first-quarter records.

• Louisiana-Pacific Corp. first-quarter sales were the highest in the company's history, up 31% from the same period in 1986. Earnings leaped over 1000% from levels recorded in the first quarter of 1986.

• Potlatch Corp. earnings and sales for the quarter rose 30% and 7% respectively. Wood products group earnings of $6.3 million eclipsed first quarter 1986 earnings of $0.9 million.

• Temple-Inland Inc. earnings have increased for four consecutive quarters, with net income 148% over the first quarter of 1986.

• Champion International Corp. attributed its 152% earnings improvement to "generally better market conditions, a sharp increase in wood products earnings, and continuing productivity improvements." Sales were off 2%.

• Boise Cascade Corp. net income jumped 61% versus the first quarter of 1986, while sales increased only a fraction of one percent. While income from the building products segment almost tripled the results of the same quarter a year ago, figures were down slightly from fourth quarter 1986.

• Union Camp Corp. quarterly earnings doubled over the same period a year ago, against a sales increase of 8.5%. Strong demand for paper-related products received much of the credit. ■

A survey of costs of southern forest management focused on the costs associated with selected forestry practices, and how they are changing

Management cost changes for southern forests

By Thomas J. Straka and William F. Watson

Mississippi State, Mississippi

Current and future costs of forest management practices in the South are essential information for forest managers and planners responsible for capital allocation decisions.

In all businesses it is important to understand the types and sizes of the costs involved. Forestry is no exception. Forest products companies maintain detailed records on costs and revenues to assist managers in making decisions on forestry projects.

However, comparable information is usually not available to nonindustrial private forest landowners or potential forestry investors. Also, forest managers need reliable cost information when considering alternative forest practices where cost records are not available.

The primary source of cost data on forestry practices in the southern United States has been *Forest Farmer.* Beginning with a 1952 forest practices cost survey, *Forest Farmer* has periodically published surveys of cost trends. Researchers at southern universities collected this cost data by surveying individuals, private firms, and public agencies across the southern U.S.

The 1984 survey was designed to provide additional information on factors that influence the cost of forestry practices, especially planting, site preparation, chemical application, and fertilizer application. The 1984 questionnaire was sent to 250 individuals. A total of 110 questionnaires was returned. Responses were well distributed over the 13 southern states. As individuals could report on more than one treatment for each practice, there were as many as 160 observations for some of the practices.

Cost analysis

Site preparation: Respondents reported on 35 mechanical site preparation treatments. Treatments ranged from a simple chop-and-burn to multipass mechanical treatments such as shear-rake-pile-bed. It is apparent that individuals are selecting the most suitable treatment for their situation. No longer are standard site preparation treatments used throughout the South. With this much variety in treatments, there was insufficient data available to develop in-depth analyses of the individual treatments.

TABLE 1—Est. cost, site prep treatments, 1984

# of passes by machines for treatment	Cost ($) of treatment/acre
1	58.42
2	90.55
3	122.68
4	154.81

We classified site preparation treatments by the number of passes across the tract by machines performing the treatment. This permitted us to develop an equation to predict the total cost of the treatment as a function of number of passes.

The equation is as follows: Cost of Treatment Per Acre = 58.42 + 32.13 (Number of Passes - 1).

The R^2 for this equation is 45.8%. The predicted cost of a treatment based on the number of passes is given in Table 1. The difference in the coefficients for this model was not statistically significant when separate equations were developed for the three geographic regions of the South. A variable defined as the average size of tract treated was also tested in this model, but was not found to be significant.

Planting costs: Respondents classified planting costs according to planting conditions and methods. For example, planting was classified as hand or machine planted, if planted on clearcut or old field, and by type of site preparation treatment carried out before planting.

Again, there was great diversity in the types of site preparation treatments used. Thus, site preparation was classified as being intensive mechanical prep-

TABLE 2—Distribution of planting data by planting conditions and methods, 1984

	% total observations	
Old fields		
Hand planted	7.4	
Machine planted	3.7	
Total old fields		11.1
After clearcutting		
Intensive mechanical site prep		
Hand planted	28.8	
Machine planted	41.1	
Total intensive mechanical site prep		69.9
Non-intensive mechanical site prep		
Hand planted	5.5	
Machine planted	13.5	
Total non-intensive mechanical site prep		19.0

aration or less intensive nonmechanical preparation. The average size of the tract also was reported.

The data revealed few trends in the cost of planting. Most of the planting reported (89%) was carried out following clearcutting operations (see Table 2). The average cost of planting old field sites and clearcuts following both intensive mechanical site preparation and non-intensive mechanical site preparation is presented in Table 3.

In none of these situations did the cost of hand planting significantly differ from the cost of machine planting. As the costs were highly variable, no significant cost differences were detected. No significant differences in the cost of planting by geographic regions were detected. Further, there were no significant trends detected in the cost of planting as tract size was varied.

Thus, one must conclude that the cost of planting is so variable in the South that any trends that might exist are masked by the variability of the data. The variability is attributed to the appropriate selection of site preparation and planting strategy by land managers for their situation. Intensive wood utilization during logging and/or a costly site preparation treatment should result in a less expensive planting method.

Conversely, a site preparation treatment which does not remove debris from the site usually requires more costly planting methods. This survey did not ask for information on the site conditions prior to planting and, thus, could not detect these relationships.

Herbicide application: Three general methods of applying herbicides were reported in the survey. These methods were aerial, ground application using a mobile carrier, and ground applications with a portable applicator. The portable applicators included backpack sprayers and injectors. The costs, including the herbicide costs, for each method of herbicide application are shown in Table 4.

The cost of aerial application was significantly higher than the cost of applying the herbicide with a portable applicator. The costs of applying herbicides with a mobile ground unit were so variable that they were not significantly different from the cost of application with an aerial or portable unit. Again, the variation in these costs by geographic region was not found to be significant.

Fertilization: Respondents applied fertilizers aerially or with ground mobile units. The costs of application, including the cost of fertilizer, are reported in Table 5. There is no significant difference in the cost of application between the two methods of application, nor was there a significant difference in costs among the geographic regions. Likewise, the size of the tract was not significant in predicting the cost of applying the fertilizer.

TABLE 3—Cost of planting, 1984

Type of site	Average cost ($)	Minimum cost ($)	Maximum cost ($)
Old fields			
Hand	52.10	24.48	81.00
Machine	36.49	18.00	57.50
Cutover sites			
Intensive mechanical site prepared			
Hand	36.45	23.00	75.80
Machine	31.99	13.13	81.00
Non-intensive mechanical site prepared			
Hand	41.58	22.00	85.00
Machine	30.02	27.00	61.00

TABLE 4—Cost* of herbicide application, 1984

Method	Average cost*/acre ($)	Minimum cost*/acre ($)	Maximum cost*/acre ($)
Aerial	74.64	30.00	113.25
Ground (mobile)	78.42	36.00	133.38
Ground (portable applicator)	55.14	16.00	117.50

** Includes the cost of the herbicide.*

TABLE 5—Cost* of fertilizer applications, 1984

Method	Average cost*/acre ($)	Minimum cost*/acre ($)	Maximum cost*/acre ($)
Aerial	39.81	27.50	65.59
Ground (mobile)	37.94	25.00	60.00

** Includes the cost of fertilizer.*

Forest practices cost trends

Two types of cost trends can be identified for forest practices cost trends: a general rise in the cost of these practices, and a shift between the components that make up these trends (i.e., direct labor, supervision, equipment and overhead). Over the last three decades the cost of forestry practices have increased dramatically, slightly outpacing increases in the producer price index. Part of the explanation for these increases is the change in the relative importance of the cost components contributing to the trends.

All seven forestry practices experienced significant price increases from 1961 to 1984 (Table 6). With the exception of hand planting, the greatest cost increases occurred in labor-intensive practices. Table 6 also shows these cost trends relative to price trends for 1967 to 1984. The year 1967 is currently the base year for the producer price index data. These changes are related to the general price level at wholesale, and to southern pine lumber prices.

The indexes provide a basis for comparing the costs of selected forestry practices with both forest products prices and with general economic trends. Southern pine lumber prices were used instead of stumpage prices because the lumber price index is more broadly based and may give a more reliable picture of price trends.

In comparing the costs of selected forestry practices with the price indexes, five of the seven major forestry practices experienced cost increases greater than the increase in the producer price index. The practices with the highest indexes (removing undesirable trees with an index of 637, timber marking with 473, and prescribed burning with 448) are well over the producer price index of 310. The indexes for four forestry practices exceeded the southern pine lumber price index of 320. This may be a partial

explanation for the trend among many forest products companies toward shifting to less intensive forest management practices.

Component cost trends

Component costs have been recorded since the 1961 survey. Component cost trends for seven important forestry practices for the period 1961-1984 are shown in Table 7.

Prescribed burning is labor-intensive. It had the greatest annual percentage increase in cost of the seven practices from 1961-1984 and one of the largest increases in percentage of direct labor cost. Prescribed burning and mechanical site preparation have the two highest combined labor and equipment components of the seven practices.

Supervision costs, as a percentage of total costs, have generally declined. Only the cost of injecting undesirable trees shows an increase in the supervision component. Overhead component cost increased for all seven practices. Shifts between costs of labor and equipment can be traced to the rising cost of energy. In the early surveys, increasing labor cost was the most significant component cost. In the 1976 survey, escalating equipment and energy costs contributed most to escalating total costs. Labor costs continue to push up the total cost of practices.

In addition to equipment/energy and labor, another factor which contributes to the increased cost of site preparation and planting is the general movement from easily treated areas into the more difficult areas.

Discussion

The failure of regional differences and tract size to be significant in explaining the variation in these costs is surprising. This means that the variation in the costs of the various practices is so diverse within a region that regional differences are not discernible.

As was pointed out earlier, this can be explained partially by the fact that land managers are putting together a package of practices appropriate for their holdings. The package for one tract in a region may include more intensive site preparation but less expensive planting methods. Other tracts might include greater utilization, low-cost site preparation treatment, and high-cost planting. Another possibility is that production technology is not being developed rapidly enough for low-cost substitutions to be implemented.

The relationship between tract size and the cost of the practice might be accounted for by dependence on contractors to perform these activities. The contractors usually are fully employed during the period in which they can perform the treatment; thus, there is no need to grant price concessions for larger tracts. In fact, low-cost planting contractors often are passed up for contractors practicing better quality control.

The actual cost of performing the various practices could be better understood with a study designed to account for the factors affecting the cost. Such a study would reveal the costs of these activities to the vendor or contractor performing the services.

However, this study is still enlightening since data on prices paid for the performance of these practices are given. The most significant finding of this study is that the prices paid for the performance of forest practices are highly variable across the South as well as in geographic regions of the South.

Component cost differences do exist between the various forestry practices. Shifts between 1961-1984 can be explained by changing technological and economic conditions. Many practice costs increased faster than the producer price index. Generally, labor and equipment (including energy) components accounted for the greatest increases. ■

THE AUTHORS are assistant professor and associate professor, respectively, Mississippi State University and the Mississippi Agricultural and Forestry Experiment Station, located in Mississippi State, Miss.

TABLE 6—Current dollar costs of selected forestry practices in the South for 1961 and 1984, and percent annual change*

Forestry practice	Current dollar cost per acre or seedling		Annual change (%)	Cost or price index (1967=100)
	1961	1984	1961-1984	1984
Prescribed burning	0.68	7.16	10.8	448
Hand planting	0.0163	0.0485	4.9	213
Machine planting	0.0120	0.0505	6.4	318
Mechanical site prep	14.09	90.23	8.4	384
Timber cruising	0.41	2.26	7.7	305
Timber marking	2.10	14.63	8.8	473
Injection of undesirable trees	7.93	64.82	9.6	637
Producer price index, all commodities				310
Producer price index, southern pine lumber				320

** All costs are on a per acres basis, except planting, which is on a per day seedling basis.*

TABLE 7—Component cost percentages of selected forestry practices in the South for 1961 and 1984

Cost component	Prescribed burning		Hand planting		Machine planting		Mechanical site preparation		Timber cruising		Timber marking		Injection of undesirable trees (not including chemical cost)	
	1961	1984	1961	1984	1961	1984	1961	1984	1961	1984	1961	1984	1961	1984
Direct labor	39.4	49.7	69.1	56.1	42.8	32.6	19.6	19.3	51.0	70.4	62.0	61.4	68.4	65.5
Equipment	32.8	30.3	5.8	13.0	34.9	35.3	65.4	63.1	9.5	6.7	13.4	10.8	15.1	6.6
Supervision	18.1	10.2	13.4	9.7	10.7	10.5	7.4	4.3	27.4	9.9	14.8	5.7	8.2	12.6
Overhead	9.7	9.8	11.7	21.2	11.6	21.6	7.6	13.3	12.1	13.0	9.8	22.1	8.3	15.3